**DEPARTMENT OF TRANSPORTATION**
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 69.28

# WELDING INSPECTION REPORT

**Resident Engineer:** Pursell, Gary
**Address:** 333 Burma Road
**City:** Oakland, CA 94607

**Report No:** WIR-003306
**Date Inspected:** 25-Jul-2008

**Project Name:** SAS Superstructure
**Prime Contractor:** American Bridge/Fluor Enterprises, a JV
**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island

**OSM Arrival Time:** 630
**OSM Departure Time:** 1530
**Location:** Shanghai, China

**CWI Name:** Hu Wei Qing and Zhashi

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|---|---|---|---|---|---|---|---|---|
| **CWI Present:** | ☑ Yes | ☐ No | | **Inspected CWI report:** | ☐ Yes | ☑ No | ☐ N/A | |
| **Rod Oven in Use:** | ☑ Yes | ☐ No | ☐ N/A | **Electrode to specification:** | ☑ Yes | ☐ No | ☐ N/A | |
| **Weld Procedures Followed:** | ☑ Yes | ☐ No | ☐ N/A | **Qualified Welders:** | ☑ Yes | ☐ No | ☐ N/A | |
| **Verified Joint Fit-up:** | ☑ Yes | ☐ No | ☐ N/A | **Approved Drawings:** | ☑ Yes | ☐ No | ☐ N/A | |
| **Approved WPS:** | ☑ Yes | ☐ No | ☐ N/A | | | | | |
| **Delayed / Cancelled:** | ☐ Yes | ☑ No | ☐ N/A | | | | | |

**Bridge No:** 34-0006
**Component:** OBG and SAS Tower Fabrication

**Summary of Items Observed:**

On this date, Caltrans Office of Structural Material (OSM) Quality Assurance (QA) Inspector Joselito Lizardo was present as requested to perform observations on the fabrication of Orthotropic Box Girder (OBG) and SAS Tower at Zhenhua Port Machinery Company (ZPMC) facility at Changxing Island, in Shanghai, China.

The QA Inspector has randomly observed the following activities on sub-assembly Bays mentioned below;

Bay 4: Tower Diaphragm
This QA Inspector randomly observed three ZPMC welders Li Xue Hua ID #058174, ID #066751, and welder ID #053605 utilizing the FCAW Process in the 3G (Vertical Groove) Position with a 1.4mm diameter electrode, filler metal brand E71T-1, class Supercored 71H, semi automatic with ZPMC WPS WPS-B-T-2233-B-U3-F, to weld fill passes on groove (bent heavy plate) splice butt joint on Tower Diaphragm Flange Sub-Assembly NSD1-SA276 A/B weld joint 12A, 7B and 4A respectively. The QA Inspector randomly observed ZPMC CWI Zhao Chen Sun monitoring preheat and weld parameters.

This QA observed ZPMC/NDE personnel perform MT without notification on 6-open rib stiffener to side panel SP389-001-001~012 and 7-open rib stiffener to SP388-001-001~014. During the ZPMC MT this QA, randomly perform VT on the fillet welds of side panels just mentioned and found unacceptable fillet weld profiles on both panels. This incident has been discussed with ZPMC CWI Huang Wen Pang and he agreed that some of the fillet welds profile need to be corrected. See photo below.

Heat straightening was also observed on 6-open rib stiffener to bottom panel BP306(A)-001 weld joints 001~012

and 5-open rib stiffener to side panel SP641(A)-001 weld joints 001~010 due to welding distortion. Oxy-acetylene gas was used with thermal heat input of less than 650 and 600 degree C following procedure HSR1(B)- 1622 and HSR1(B)-1640 respectively.

This QA observed grinding/cleaning of tack welds continue on PJP connection of 40mm thick connection/stiffener plate to tower double diaphragm SSD1-SA27.

Bay 7: OBG - Floor Beam Sub Assembly
This QA was informed by ABF/QA Inspector Art Peterson regarding two cracked tack welds on stiffener to web plate fillet weld connection FB034-001-075. Upon arrival at Bay 7, this QA noted the two cracked tack welds have already ground/removed. Per ZPMC CWI Hu Wei Qing, they will do the MT on tack removal in the afternoon. See photo below.

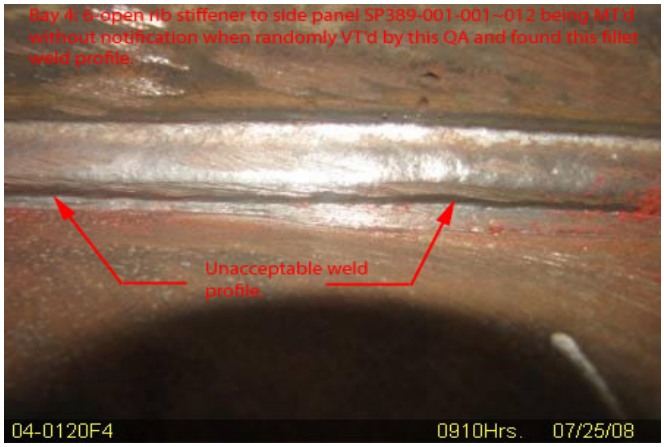
This QA Inspector randomly observed ZPMC welder Zheng Mingye utilizing the FCAW Process in the 3G (Vertical Groove) Position with a 1.4mm diameter electrode, filler metal brand E71T-1, class Supercored 71H, semi automatic with ZPMC WPS WPS-B-T-2233-TC-U4b-F, to weld fill passes on continuity plate to floor beam bottom flange FB003-052-010/022 and FB003-052-034/046. The QA Inspector randomly observed ZPMC CWI Hu Wei Qing monitoring preheat and weld parameters.

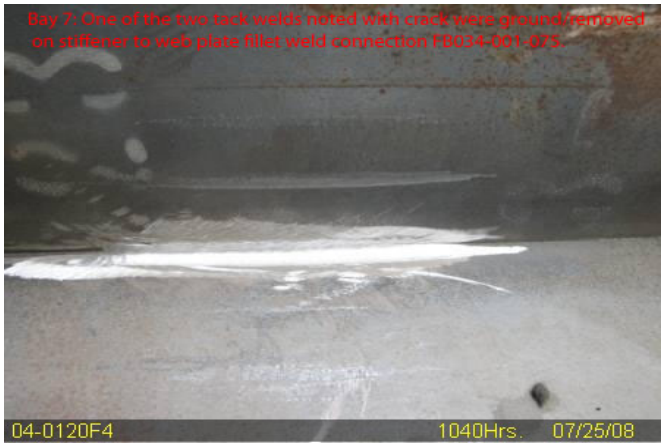
FCAW fillet welding (2F) was observed on flange to web plate of floor beam FB023-001-133. ZPMC welder working on this was identified as Wang Hong Lei ID# 066687. Another fillet welding(2F) was noted on stiffener to web plate on floor beams FB034-001-104/105. Tack welding/fit-up of stiffener to web plate of floor beam FB033-001 and FB036-001 using TL-508 and THJ506Fe electrode respectively this QA also observed. ZPMC CWI Hu Wei Qing was noted monitoring the parameters.

Bay 8: Tower Diaphragm
This QA Inspector randomly observed two ZPMC welder Jiang Yong Sheng ID number 045240 and Chen Chao Nian ID #048688 utilizing the FCAW Process in the 3G (Vertical Groove) Position with a 1.4mm diameter electrode, filler metal brand E71T-1, class Supercored 71H, semi automatic with ZPMC WPS WPS-B-T-2233-B-U3-F, to weld fill pass on groove (bent heavy plate) splice butt joint on Tower Diaphragm Flange Sub-Assembly SSD1-SA277 A/B-11B and NSD1-SA196 A/B-2A respectively. The QA Inspector randomly observed ZPMC CWI Lvliqing monitoring weld parameters. Grinding/cleaning of tack welds of fillet weld connection between tower diaphragm plate and diaphragm flange at NSD1-SA326-2 and SSD1-SA334 A/B-8 was also noted.

Heat straightening was observed on tower diaphragm flange NSD1-SA265 weld joint 17A/B, 9A/B, 6A/B and 4A/B due to welding distortion. Natural gas was used with thermal heat input of less than 650 degree C and with the aid of 50-Ton hydraulic Ram following procedure HSR1(T)-2825.

Oxy-acetylene gas bevel cutting to 45 degree 2-sides of 40mm thick plate intended for various double diaphragm connector/stiffener plates was also observed.




**Summary of Conversations:**

No significant conversation ocurred today.

**Comments**

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Joshua Ishibashi, (858) 232-7081, who represents the Office of Structural Materials for your project.

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| **Inspected By:** | Lizardo,Joselito | Quality Assurance Inspector |
| **Reviewed By:** | Cuellar,Robert | QA Reviewer |